

A NEW SPECIES OF *TROGLOPEDETES* (COLLEMBOLA: PARONELLIDAE) FROM GUERRERO, MEXICO¹

Margarita Ojeda, José G. Palacios-Vargas²

ABSTRACT: *Troglopedetes oztoticus* n.sp. from Juxtlahuaca Caves, Guerrero State, is described and differentiated from its closest relatives. Fifteen drawings are included.

RESUMEN: Se describe la nueva especie *Troglopedetes oztoticus* de las Grutas de Juxtlahuaca, Estado de Guerrero se diferencia de las especies mas cercanas. Se proporcionan 15 dibujos.

In America, the genus *Troglopedetes* has been found only in caves of the Neotropical Region of Mexico and in Central America, and in leaf litter in South America. To date only four species have been described. *T. maya* (Mills, 1938), described from Yucatan caves, is the only species known from Mexico, although there must be more undescribed taxa in the tropical areas of the country. *T. delamarei* Massoud and Gruia, 1973 was described from Cuba and cited from Dominican Republic by Mari Mutt (1977). *T. lamottei* (Delamare-Duboutteville, 1950) occurs in the French Guinea and *T. millsii* (Arle, 1939), known from Brasil, probably belongs to *Troglopedetina*.

The new species described below was reported by Palacios-Vargas (1982) as *Troglopedetes* sp. and belongs to the Neotropical fauna that probably invaded southern habitats of Mexico recently (maybe during the Pleistocene) after the formation of the Eje Neovolcanico, which now is a barrier for the distribution of this family. In Mexico, the genus has invaded various caves such as Grutas de Atoyac in Veracruz State, where we have found a different undescribed species.

The species of this genus are remarkable because of the troglomorphism they present, e.g., lack of eyes and modifications of the tibiotarsal complex. There also must be some physiological adaptations, because of the difficulties of rearing these animals in laboratory conditions.

Troglopedetes oztoticus n.sp.

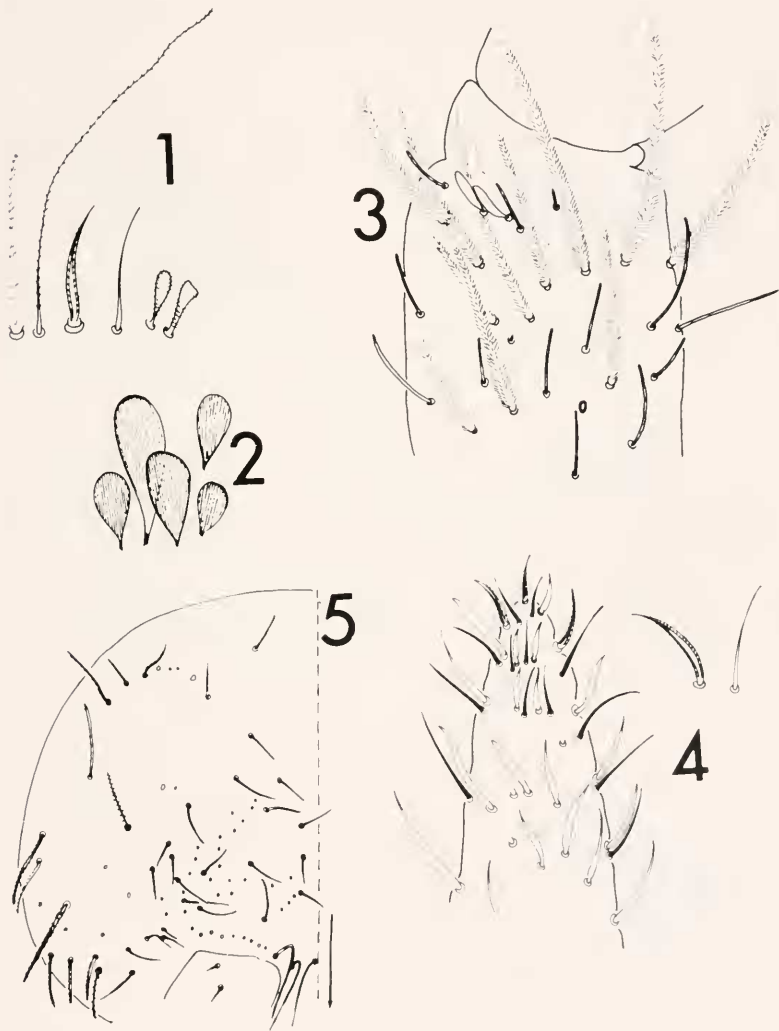
Length 2-3 mm. Without eyes or trace of pigmentation in body and ocular region. Head and body covered with several types of setae and trichobothria (Fig. 1). Scales elliptical, oval or somewhat lanceolate, with regular longitudinal striations (Fig. 2). Dens with ciliated spines.

Ratio diagonal head: antennae (average of five specimens) = 1.0:3.0; ratio of antennal segments I:II:III:IV = 1:1.1:0.9:1.7. Ant. I and ant. II with scales and setae, the basis of the

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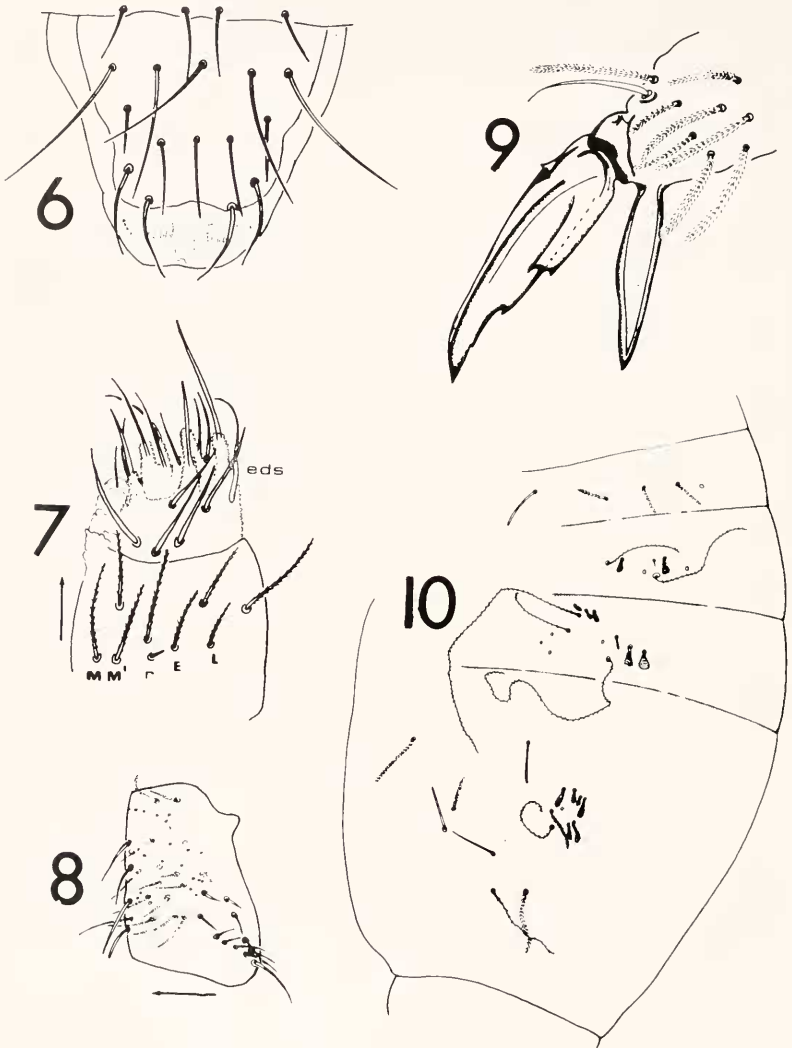
²Laboratorio de Acarología, Departamento de Biología, Facultad de Ciencias, UNAM, 04510 México, D.F.

first with small spinelike setae. Sense organ of ant. III of 2 blunt sensillae and 2 guard sensillae subequal in length but thinner than the first pair (Fig. 3). Ant. III has several sensillae of various lengths and numerous ciliated setae. Ant. IV with weak tendency to annulated and covered by ciliated setae and sensillae (Fig. 4).



Figs. 1-5. *Troglapedetes oztoticus* n.sp. 1. Types of setae; 2. Scales; 3. Apex of Ant. III; 4. Apex of Ant. IV; 5. Dorsal setal pattern of head.

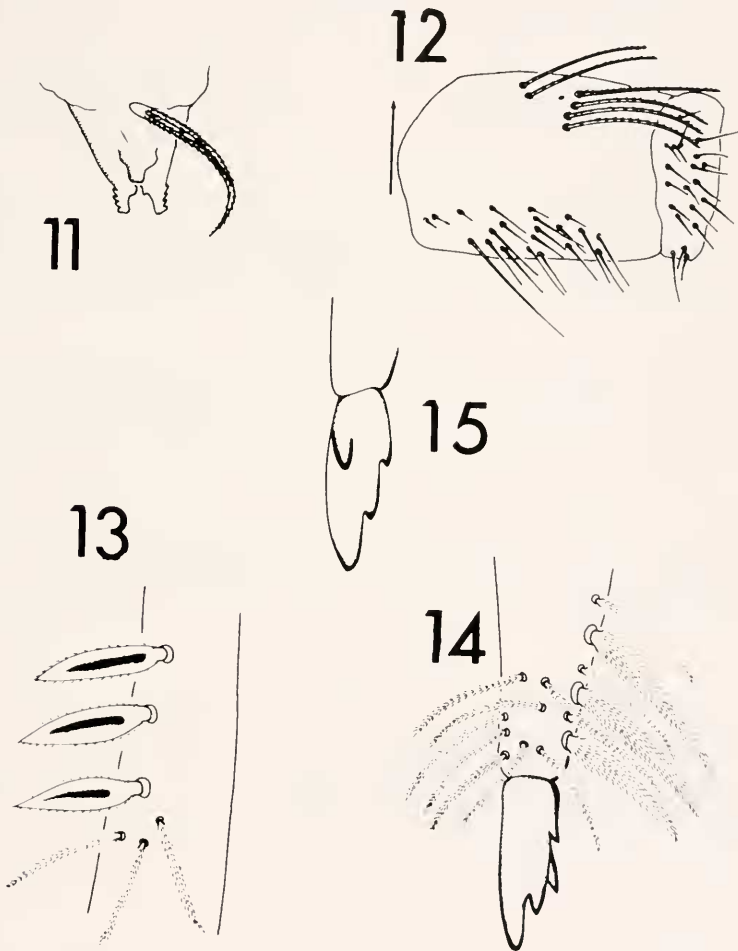
Head with two dorsal trichobothria, setae of several lengths, scales and pores (Fig. 5). Labrum with five long posterior setae, five smaller medium setae and four anterior thicker setae (Fig. 6). Base of labium with setae "r" small and the others longer and ciliated (Fig. 7), apex of labium with an external differentiated setae.



Figs. 6-10. *Troglopedetes oztollicus* n.sp. 6. Setal pattern of Labrum; 7. Chaetotaxy of Labium; 8. Trochanter; 9. Tibiotarsus; 10. Abdominal setal pattern.

Tenant hair apically lanceolate, short and thin. Unguis with a pair of minute outer teeth, a pair of subequal inner teeth in the middle region and 2 unpaired inner teeth, 1 median and 1 distal, the latter much smaller. Unguiculus lanceolate, ventral lamella weakly crenulate (Fig. 9). Ratio unguis: unguiculus = 1.0:0.6; ratio unguis: tenant hair = 1.0:0.4. Trochanteral organ as in Figure 8.

Abd. I without trichobothria; Abd. II, III, and IV with 2, 3 and 2 pairs of trichobothria respectively (Fig. 10). Tenaculum with 4+4 teeth and a thick setae on the corpus, which often



Figs. 11-15. *Troglapedetes oztoticus* n.sp. 11. Tenaculum; 12. Collophore; 13. Basal spines of dens; 14. Distal spines of dens; 15. Mucro.

appears bifid (Fig. 11). Collophore with anterior setae much longer and thicker than posterior ones (Fig. 12). Genital region with many thick ciliated setae.

Manubrium covered with setae and scales. The ventral setae thin and long but not differentiated. Dens with 2 rows of spines (35-40 each row). Proximal spines thick and weakly ciliated (Fig. 13), distal ones larger and thoroughly ciliated, similar to setae (Fig. 14). Mucro with 4 teeth, 3 in a row and 1 in paramedial position (Fig. 15). Ratio dens: mucro = 1.0:0.06.

Type Locality: Mexico, Guerrero State, Grutas de Juxtlahuaca. *ex* soil and bat guano. 11-IV-1981. J.G. Palacios *leg.* This cave is in the Transitional Region between the Biotic Provinces Guerrerense and Balsas Inferior, Nearctic and Neotropical regions respectively (Smith, 1940).

The Holotype and 5 paratypes will be kept in the second authors' collection and 2 paratypes will be deposited in the Museo de Historia Natural de la Ciudad de Mexico. *Derivatio nominis:* from the Nahuatl *oztotl* = cave, referring to the habitat of this species.

DISCUSSION

The new species differ from *T. maya* (Mills, 1938) by its smaller unguis teeth and tenent hair and by the shape of the mucro, *Troplopedetes oztotlicus* differs from *T. delamarei* (Massoud and Gruia, 1973) in having dental spines which are shorter, thicker and less ciliated, and in the length of the tenent hair.

Several characters, e.g., sensorial organ of Ant. III, head and abdominal chaetotaxy, number and shape of dental spines, if included in the description of new taxa, could be of assistance both in differentiating species, and in the clarification of phylogenetic relations.

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